

Ingeniously simple, simply ingenious

Wuppertal (16. January 2009).

In line with the principle “Less is more”, a future-oriented latch concept for side-doors developed by Brose is setting standards in terms of size, weight and comfort. Weight savings of up to one kilogram per car make the new latch an attractive choice.

Compared to commercially available solutions, the recently developed latch system weighs much less despite its robust design and provides the automaker with major benefits regarding installation space. It unlocks extremely fast, enhancing the car driver’s comfort. Its high common-part usage provides a proliferation of options with proven quality.

Ingeniously simple

When asked what the secret is to such an outstanding step forward in development, the answer sounds simple: “We completely reconsidered the latch concept. What we then came up with was a new kind of clutch concept, where the number of components had been noticeably decreased,” explains Simon Brose, head of closure system design and components in Wuppertal – and as coincidence would have it, a namesake of the company founder, Max Brose.

Based loosely on the motto “Less is more”, proven components take on multiple functions interacting skilfully with the patented clutch. The logical result of this clear reduction in components in the core area of the latch are weight savings of approx. one kilogram in a four-door car and roughly 60% less installation space; at the same time, providing the greatest possible comfort, very good haptic and acoustic feedback as well as functional safety.

Minimally moved masses, best possible comfort

Positive consequences resulting from minimizing the masses moved can be seen in the subsequent low energy consumption of the electric motors as well as in the shorter unlocking times of less than 25 milliseconds. In comparison, the fastest of the latches commercially available at the present time require 40 milliseconds.

You might be forgiven for thinking this new kind of closure system development entails new sources of error, but you are mistaken.

“That’s what’s so ingenious about this basic idea of using a component, which has been used at Brose a million times over, in a new functionality,” explains Simon Brose.

Modular design latch variants for cross-model use

The innovative core module of the Brose latch components is intended to see use in all car variants of automakers across the board. Depending on their specifications, the proliferation of options ranges from manually operated closure systems to the power opening high-end variant. Thanks to a far-reaching common-part strategy and modular structure, it requires little effort to be adapted to meet customer requirements.

The high level of common parts used in all latch variants makes it possible for Brose to have lean, highly automated manufacturing facilities for cross-client core products. Generating variants does not occur until a relatively late point in the assembly line. Short response

times ensure JIT capability. The automaker can profit from this cost effectiveness and flexibility.

Reducing costs and weight through system integration

Additional benefits can be gained for the automakers through the latch module: in this case, one sub-assembly comprises the latch, inside door handle and all relevant electric and mechanical connections. Brose can be seen following up this notion of systems with the door system: all the essential components of vehicle door are comprised on the vehicle door – from the window regulator to the latch.

Use of the lighter plastic as a carrier material in combination with the new Brose latch enhances weight savings by as much as five kilograms overall per vehicle - coupled with the respective cost savings.